

DAYLIGHTING DESIGN:

The advantage of having a north facing facade improves the opportunities with daylighting without unwanted solar gain. With this daylighting design, the focus is on the retail aspect of the project. A typical retail floor plate is used to determine the data. This particular space in the project has quite a bit of glazing on the north facade, but a shallow depth allowing daylight to penetrate into the space.

The daylighting sheme is a typical window wall or sidelight.

DAYLIGHT FACTOR:
DF = .2 x (WINDOW AREA / FLOOR AREA)

DF = .2 x (500SQFT / 2000SQFT)

DF = .05

Daylighting on a task

Fc = Ehrz x DF x VLT x LLF

Fc = 1230 x .05 x .77 x .062

Fc = 29

Glazing to Floor area
500sqft/2000sqft

1:4 Glazing to Floor area ratio

For Houston, Texas, a daylight factor of 1.5% is pereferable for ordinary task lighting. This retail area has a daylight factor of 5%. This space receives too much daylight and it will be necessary to limit the amount of daylight by screens or blinds.

ARTIFICAL LIGHTING SCHEME:

The high amount of glazing and daylight factor minimize the need for artificial lighting. Due to the nature of the space, retail, adequate lighting is needed in the space for cloudy day, or evenings. The fixture in the space is a ceiling and downlight luninare. The fixture has one lamp per fixture. A typical 120.00 V fixture that has a load of 64 VA. The light loss factor for this particular fixture is .88, 6000 Lu, 93 lumens/watt, @ 64 W. The color temperature for this particuar fixture is 4230k.

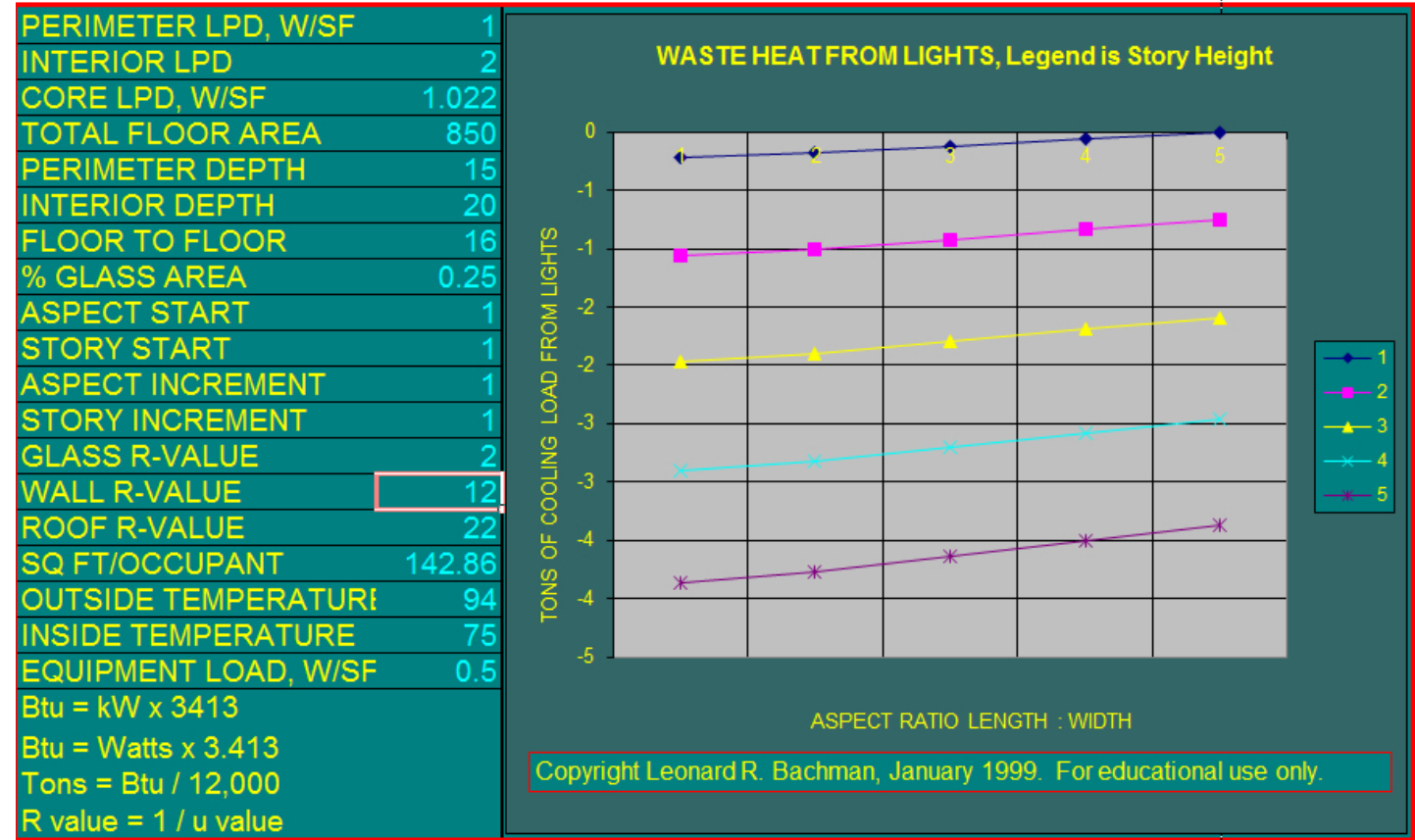
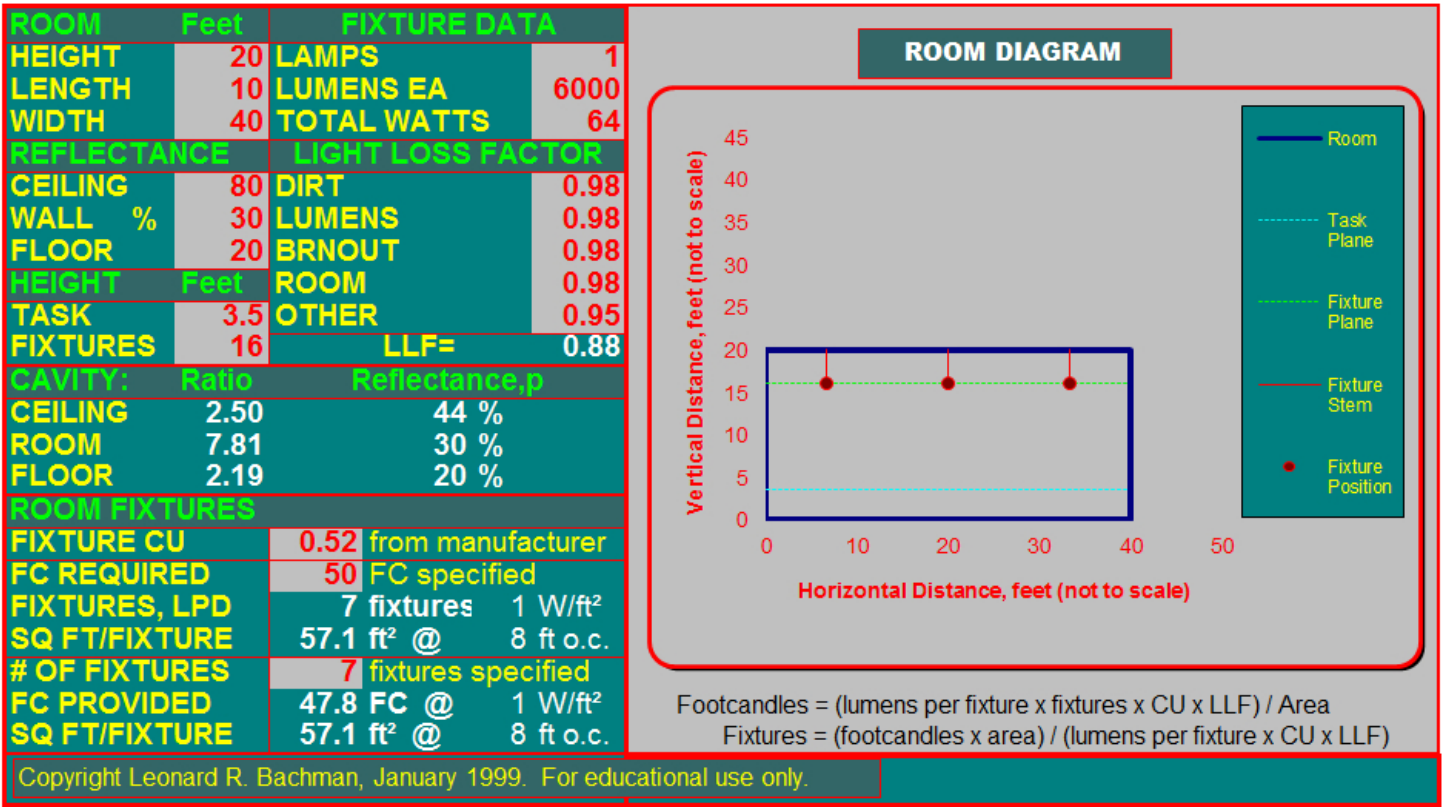
LIGHTING POWER DENSITY

LPD = Fc/ (lumens /W) x CU x LLF

LPD = 50/ 93 x .5 x .88

LPD = 50/ 48.92

LPD = 1.02



Project Name:
3500 STUDIO PROJECT

City, Country
Houston, Texas USA

Latitude/Longitude/Elevation
29°45’46”N 95°22’59”W
43ft

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